

PCEC4305 **DIGITAL COMMUNICATION TECHNIQUES** (3-0-0)

MODULE-I. 12 Hrs

Digital Modulation Schemes:Representation of Digitally Modulated Signals, Memoryless Modulation Methods, Signaling Schemes with Memory, Power Spectrum of Digitally Modulated Signals

Optimum Receivers for AWGN Channels: Waveform and Vector Channel Models, Waveform and Vector AWGN Channels, Optimal Detection and Error Probability for Band-Limited Signaling, Optimal Detection and Error Probability for Power-Limited Signaling, A Comparison of Digital Signaling Methods, Detection of Signaling Schemes with Memory, Optimum receiver for CPM Signals

MODULE-II 12 Hrs

Introduction to Information Theory: Mathematical model for information sources, Logarithmic measure of information, lossless coding for information sources, channel model and channel capacity, Channel reliability function, channel cutoff rate.

Digital Communication through Band-Limited Channels: Characterization of Band-Limited Channels, Signal design for Band-Limited Channels, Optimum Receiver for Channels with ISI and AWGN, Linear Equalization, Decision-feedback Equalization.

MODULE-III 12 Hrs

Spread Spectrum Signal for Digital Communication: Models of spread spectrum communication, Direct sequence spread spectrum signals, frequency hopping spread spectrum signals, other types of spread spectrum signals, synchronization of spread spectrum system.

Text Book:

Text Book:

1. John G.Proakis, M. Salehi, "Digital Communications",5th Edition 2008, McGraw Hill, 2008.(Selected portion form Chapter 3,4, 6, 9 and 12.)

Reference Book:

1. B. Sklar and P K Ray; Digital Communications – Fundamentals and Applications; Pearson Education; 2009